Quadrus Ingest Machine

User's Guide

Release 7.8

Revision #090401B

QUADRUS

Copyright and Disclaimer

Product specifications are subject to change without notice and do not represent a commitment on the part of Quadrus Technology Limited.

The software described in this document is furnished under a license agreement. You can obtain a copy of that license by visiting Quadrus's Web site at www.quadrus.tv The terms of that license are also available in the product in the same directory as the software. The software may not be reverse assembled and may be used or copied only in accordance with the terms of the license agreement. It is against the law to copy the software on any medium except as specifically allowed in the license agreement.

This document is protected under copyright law. An authorized licensee of Quadrus Ingest Machine may reproduce this publication for the licensee's own use in learning how to use the software. This document may not be reproduced or distributed, in whole or in part, for commercial purposes, such as selling copies of this document or providing support or educational services to others. This document is supplied as a guide for Quadrus Ingest Machine. Reasonable care has been taken in preparing the information it contains. However, this document may contain omissions, technical inaccuracies, or typographical errors. Quadrus Technology Limited does not accept responsibility of any kind for customers' losses due to the use of this document. Product specifications are subject to change without notice.

© 2009 Quadrus Technology Limited and its licensors. All rights reserved.

US patents under pending.

Avid, Avid Unity, Avid Interplay, Avid DNxHD, Avid DNxchange are either registered trademarks or trademarks of Avid Technology, Inc. in the United States and/or other countries. Apple and QuickTime are registered trademarks of Apple Computer Inc. All other trademarks are contained herein are the property of their respective owners.

Contents

Using This Guide 6

Getting Started 7

On-line Help 8

Hardware and Software Requirements 9

DNxchange HD Option 10

Storage 11

Connecting a DV Device 12

Changing the Power Scheme 13

Starting Your Quadrus Ingest Machine Application 14

Quitting Your Quadrus Ingest Machine Application 14

Turning Off Your Equipment After Quitting 15

User Interface 16

Channel Window 17

Control Buttons 19

Track selection 20

Clip name and extra fields 21

Output definition 24

Deck Control 26

Log Window 30

Output Mixer 31

Capturing 32

Capturing and Logging at the Same Time 33

Capturing by Setting Both Marks 33

Capturing by Setting Only One Mark....34
Capturing On-the-Fly....35
Capturing in Quick Record Mode....37
Capturing with Time-of-Day Timecode....38
Scheduled Capturing....39
Scheduled Capturing from Deck....39
Working with Schedule List....40
Capturing in Satellite Mode or No Device Control....43
Using timecode from audio track....44
Setting the Schedule Capture....45
Synchronous Recoding....46
Logging....48
Logging with Quadrus Controlled Decks....49
Pausing the Deck While Logging....52
Working with the Avid Interplay....53
Connecting to the Avid Interplay....53
Selecting the Interplay Folder....54
Advanced Input....55
Vertical Blanking Information....55
Vertical Blanking Interval Line Ranges....55
Displaying and Preserving Vertical Blanking Information....56
Effects of Preserving Vertical Blanking Information on Compressed Video Quality....56
Resolutions and Storage Requirements....58
Compression and Ingest Machine application....59
Monitor Display Resolutions....60
Compression and Resolutions....60

Resolution Specifications 60
Resolution Specifications: SD Uncompressed 61
Resolution Specifications: Digital Video (DV) 61
Resolution Specifications: MPEG 62
Storage Requirements 62
Estimating Drive Space Requirements 62
Estimated Storage Requirements: SD Uncompressed 64
Estimated Storage Requirements: DV 64
Estimated Storage Requirements: MPEG 64
Maximizing Drive Space 66
Application Settings 67
Global Settings 67
Channel settings 69
Appendix A. Installation Instructions 71
Downloading a software 71
Installation 72

Using This Guide

This guide contains the task-oriented instructions and conceptual information you need to use features of your Quadrus Ingest Machine application.

This guide is intended for all users, from beginning to advanced.

The material in this document applies to the “Windows® XP SP2 Professional English” operating system.

The documentation describes the features of all models. Therefore, your system might not contain certain features and hardware that are covered in the documentation.

This document assumes that the system administrator has already installed the Quadrus Ingest Machine software on the computer.

You can visit our web site www.quadrus.tv for information about the updates and to contact us for support.

Getting Started

This chapter provides background information about the Quadrus Ingest Machine software. The following topics are discussed:

- On-line Help
- Hardware and Software Requirements
- Storage
- Connecting a DV Device
- Changing the Power Scheme
- Starting Your Quadrus Ingest Machine Application
- Quitting Your Quadrus Ingest Machine Application
- Turning Off Your Equipment After Quitting

Quadrus Ingest Machine is powerful digital video/audio recording software designed to work seamlessly in Avid environments. Ingest Machine offers the ability to simultaneously recording a several channels into an Avid MXF format, but with that movie available immediately for editorial as soon as recording begins.

On-line Help

On-line help is always available while you are working in Quadrus Ingest Machine.

- **On-line help:** Click the *Help>Contents and Index* menu if you want to search for a specific topic or command.
- **Tool tips:** To find out what a button or other Ingest Machine control does, pause your mouse pointer over it and a “tool tip” appears explaining its function.

Hardware and Software Requirements

Your Ingest Machine application requires specific hardware and software components

The following hardware platforms are supported:

- Dell Precision R5400 Rack- Workstation
  - Two Intel Quad-Core Xeon E5450
  - 4GB RAM
  - NVIDIA Quadro NVS 290
  - Windows XP SP2 Professional English
- Video Interface Boards
  - Deltacast DETLA-sdi-e 40 (up to 2 boards)
  - DekTec DTA-124[1]

Optional applications and hardware includes:

- Avid Unity Client Software for the Fibre Channel and Ethernet connections[2]
- ATTO Celerity FC-41XS/ES Fibre Channel Adapter
- Avid DNxchange (seeDNxchange HD Option)

The only supported application, installed in addition to the Quadrus Ingest Machine is the Avid Unity Client Software 5.1.1. Please make sure that no other application interferes with the Quadrus software

[1] DekTec DTA-124 is supported in older installations
[2] Verified on Avid MN 5.1.1 client version

DNxchange HD Option

The Avid DNxchange™ is transcoder interface that converts high-definition (HD) media from HD-SDI devices to Avid DNxHD media encoded in a Serial Digital Transport Interface (SDTI) stream. The Avid DNxchange also transports 8 channels of embedded audio, longitudinal timecode (LTC), and other ancillary data embedded in the HD SDI input stream.

Using this option the Ingest Machine can record the HD media using the existing standard-definition (SD) serial digital interface. The Avid DNxchange is a rack-mounted I/O device which can be populated with two encoder channels. For more information on features and connections, see the "*Avid DNxchange Installation and User's Guide*".

Storage

The recorded files may be stored on:

- Ethernet attached storage, any NAS, e.g. the Avid Unity storage device
- Fibre Channel storage, any SAN, e.g. Avid Unity with FC option
- Direct attached storage, e.g. the SCSI disk array

The used storage must provide sufficient bandwidth for writing multiple recording streams in real-time. To calculate the necessary bandwidth in megabits, use the following formula:

(***channel-count*** X (***channel-resolution-speed*** + 1.2 (Mb/s) X ***channel-audio-count***)) X 1.3

To obtain the channel resolution speed, see Storage Requirements

If storage is not able to keep up with the recording speed, the Ingest Machine will stop the recording with the error message: ***Unable to write to media drive: not enough bandwidth***

The Ingest Machine workstation may be equipped with internal media drives. These drives may be used as a buffer for incoming media and loopback recording. These internal media drives should be configured in a RAID 0 stripe.

Connecting a DV Device

You can capture DV25 or DV50 media directly from a DV camera or deck (a DV device). To use a DV device, you must connect it to your system correctly. You can connect and use up to 16 DV devices simultaneously.

To use your DV device in the Ingest Machine application:

1. Close the Ingest Machine (see Quitting Your Quadrus Ingest Machine Application)
2. Connect a DV device to 1394 port on your computer

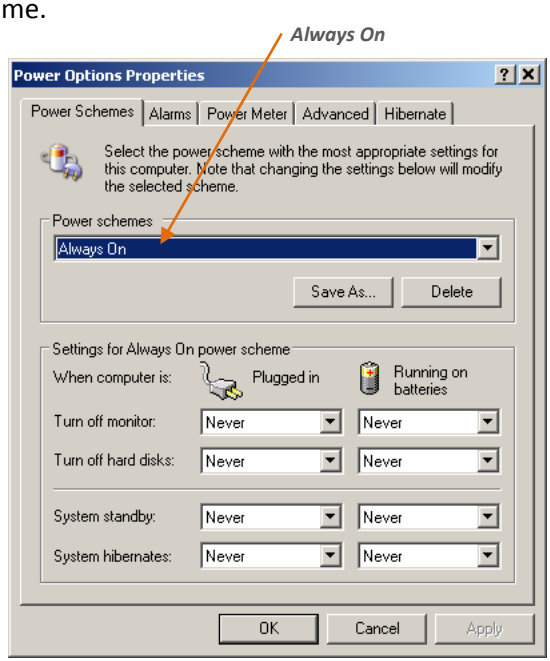
   When a DV device is connected to the 1394 port, and turned on, the Windows operating system will detect the device and install any necessary drivers.
3. Start the Ingest Machine (see Starting Your Quadrus Ingest Machine Application)

   The signal of the DV channel(s) should appear in the Ingest Machine channel window

Please make sure Windows operating system recognizes the external DV devices before you start the Quadrus Ingest Machine application

Changing the Power Scheme

When you run the Ingest Machine application, an Incompatible Power Scheme warning window might appear. Some of the Windows standard power schemes available might affect the performance of the capturing functions. Quadrus recommends you use the **Always On** power scheme.



Starting Your Quadrus Ingest Machine Application

Your Quadrus Ingest Machine application is located by default in the following folder:

{Target Drive}\Program Files\Quadrus Technology\Quadrus Ingest Machine 7.8

The installation process adds a desktop icon and a pointer to your Quadrus Ingest Machine application in the Start menu. For most users, these provide the easiest way to start the application.

Your Quadrus Ingest Machine application does not start properly if the application file is moved from the Quadrus Ingest Machine application folder.

The Quadrus Ingest Machine can only be operated from the full privileged Administrator account

Quitting Your Quadrus Ingest Machine Application

When you end a work session on your Quadrus Ingest Machine application, you must first quit the application, and then turn off your equipment. For more information on turning off your equipment, see Turning Off Your Equipment After Quitting

To quit your Quadrus Ingest Machine application and leave the application immediately: Click the **Close** button at the far right for the main window's title bar. A confirmation message box opens.

Turning Off Your Equipment After Quitting

When you finish using your system and want to turn it off completely, follow these steps to avoid damaging your system or media storage drives.

Quit your Quadrus Ingest Machine application before turning off your equipment. For more information, see Quitting Your Quadrus Ingest Machine Application

To turn off your equipment:

1. Turn off the system by doing the following:
   Select *Start menu>Shut Down*. The Shut Down Windows dialog box opens
2. Turn off peripheral devices (such as monitors and speakers)
3. Turn off external storage devices
4. Turn off all other hardware

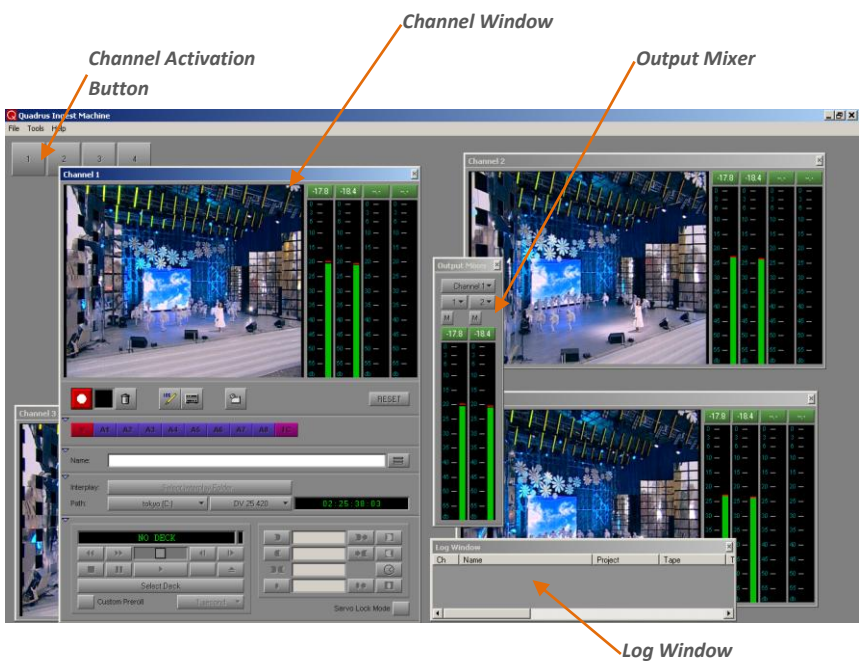
Never remove media drives from your Quadrus system when it is turned on. Shut down the computer, and then remove the drives.

User Interface

When the Ingest Machine is starting, the main application window will have three different window types: The Channel window(s), The Log window and the Audio Mixer. Each window can be hidden by pressing the close button in the right-top window's corner. Hidden windows can be restored from the main application window **Tools** menu. The Channel window(s) can be restored by pressing the **Channel Activation** button in the main application window.

In this chapter the following topics are discussed:

- Channel Window
- Log Window
- Output Mixer

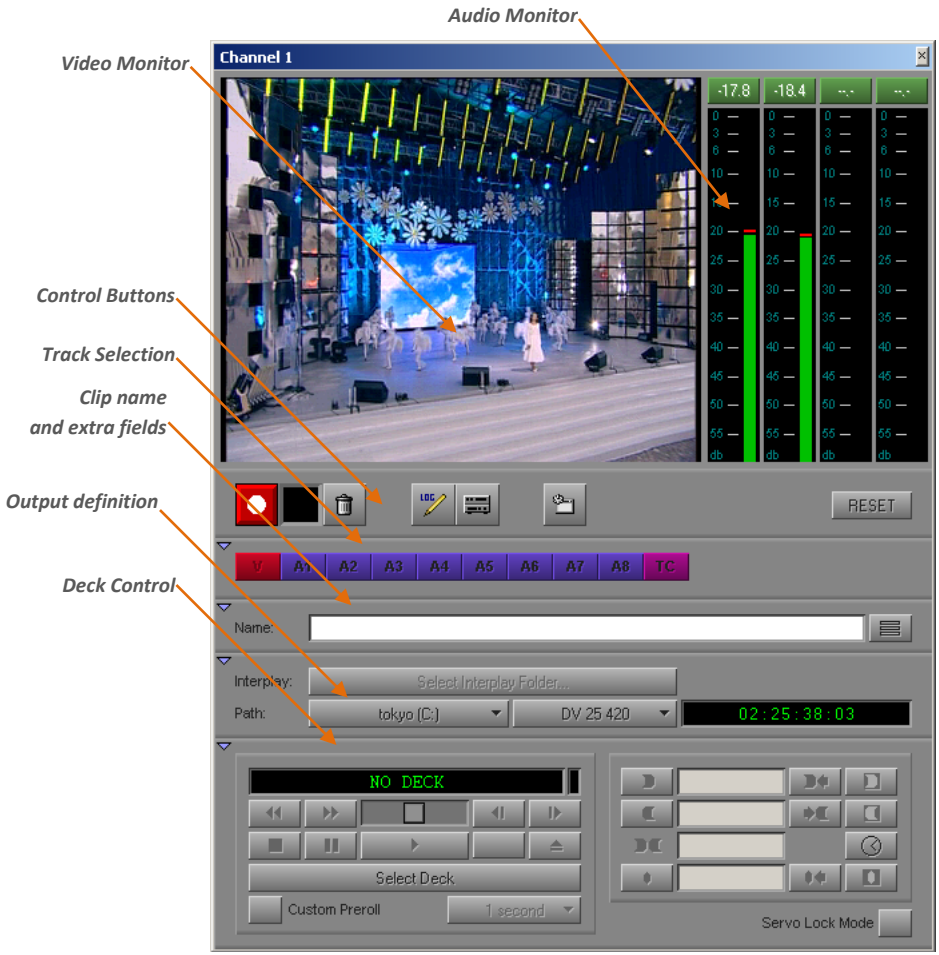


Channel Window

The Channel window is a central location for important information and for management of your ingest channel. The following topics provide basic information about the Channel window.

The Channel window provides controls for cueing, marking, and logging footage, and specifies capturing parameters such as source and target locations.

Channel window is organized in panes:

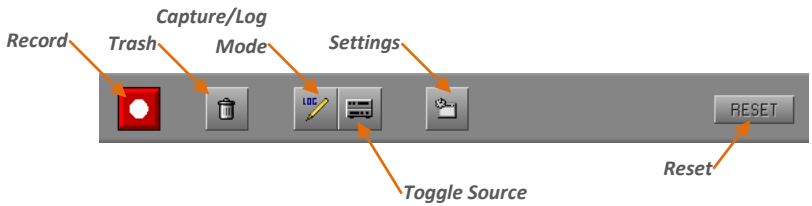


The following table describes the panes available in the Channel window:

Pane	Function
Video Monitor	Displaying the incoming video stream in half resolution. The viewing mode can be set as 4:3 mode or 16:9 for widescreen monitoring. See the Application Settings for details. While recording the banner **REC** is shown on the screen in the right-top corner.
Audio Monitors	Audio VU/peak levels (conforming IEC 60268-18) can be monitored and corrected accordingly. Clicking on the peak level value will reset it.
Control Buttons	Provides basic management functions such as Record/Stop, Reset and Settings.
Track selection	Allows selecting the tracks for recording.
Clip name and extra fields	Provides the clip name and optional information
Output definition	Selects the video resolution and other output parameters
Deck Control	Deck settings and deck management

Control Buttons

The following illustration shows the Control Buttons:



The **Record** button starts and stops the recording.

The **Trash** button stops the recording and deletes the currently recorded clip after confirmation.

The **Capture/Log Mode** button switches the Channel window for logging, otherwise the Channel window works in capture mode. Logging can be done only when a deck is available. See Logging for details.

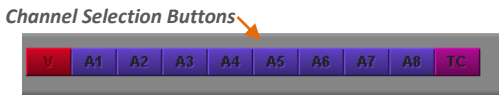
The **Toggle Source** button switches the Channel window between deck and satellite mode. The satellite mode is used for signals that need no control from the Ingest Machine. See Capturing in Satellite Mode or No Device Control for satellite control pane description.

The **Channel Settings** button displays the Channel settings dialog. See Channel settings for details.

The **RESET** button is used to restart channel if the signal is lost. The condition of the lost signal is indicated by **NO SIGNAL** banner in the video monitor pane. The reset button eliminates the banner and restarts the source acquisition. This button is disabled during recording mode on that channel.

Track selection

Each channel can record the video track, up to 8 audio tracks and timecode track from the source signal. The track selection buttons selects the appropriate video, audio and timecode tracks for recording. The track will be recorded if the track button is selected and the signal on that track is present.



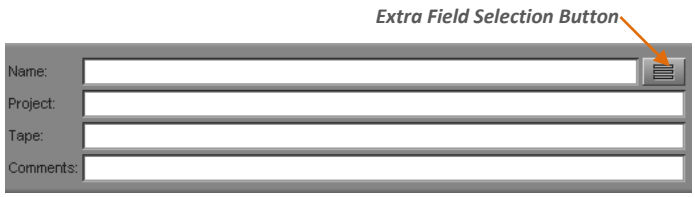
To perform the track selection click the **Channel Selection** buttons

The video signal must be always present for recording. You cannot record audio only in this version of the Ingest Machine

When you use a deck, the TC (timecode) track is selected by default, and the system captures the timecode from the source tape. If you deselect the TC button, the system captures with time-of-day timecode. For more information, see Capturing with Time-of-Day Timecode

Clip name and extra fields

Clips can be named and extra fields added by typing the appropriate information into this pane. This information can be added any time before or during the recording. If no name is supplied, the Clip will have default name “Unknown Name.X”, where X is an increasing number.



To name a clip before or during capturing:

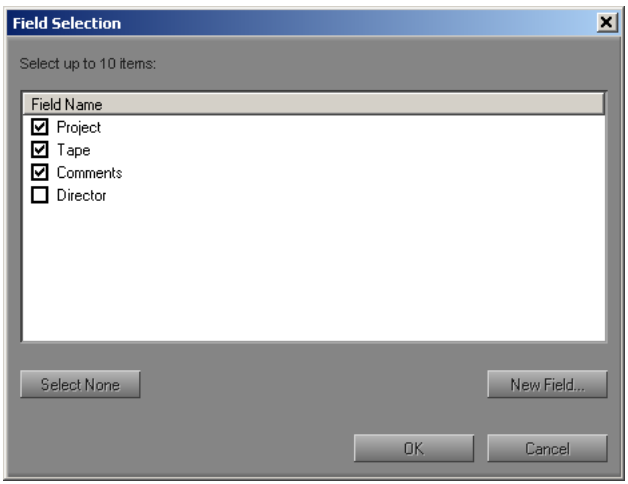
1. Click the arrow in the Channel window to display the **Name** box
2. Type a name for the clip

Adding Extra Text Fields

In addition to the **Name** field, more fields can be added to the clip.

When you click the Extra Fields Selection button in this pane, the Field Selection dialog box opens. The Field Selection list includes any extra fields already created, in addition to any user-defined fields. Three fields are pre-created: **Comments**, **Project** and **Tape**. The fields you select in the Field Selection list will appear in the Channel window below the **Name** field if activated.

Up to 10 extra fields can be shown in the Channel window



To add the extra fields:

1. Click the **Extra Field Selection** button
   The Field Selection dialog box opens
2. Click the **New Field** button
   The New Field Name dialog box opens
3. In the Field Name text box, type the name you want to appear as a field in the Channel window
4. Click **OK** in the New Field Name dialog box
   The Field Selection list opens with your new text field selected
5. Click **OK** in the Field Selection dialog box
   The new text field appears in the Channel window

To display or hide extra fields:

1. Click the **Extra Field Selection** button
   The Field Selection dialog box opens
2. Check the box for fields that you want to display in the Channel window
3. Uncheck the box for fields that you want to hide in the Channel window
4. Click **OK**.
   Only the selected fields appear in the Channel window.

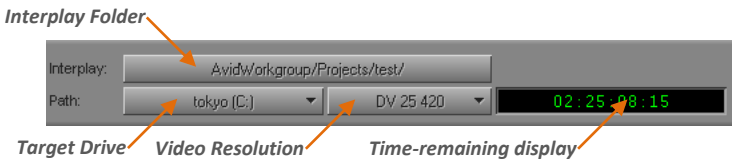
To delete extra fields:

1. Click the **Extra Field Selection** button
   The Field Selection dialog box opens
2. Select the field that you want to delete with the left mouse button
3. Click the right-mouse button on the selected field and choose **Delete** from pop-up menu
4. Click **OK** in the Field Selection dialog box

*The three pre-created extra fields **Project**, **Tape** and **Comments** cannot be deleted*

Output definition

This pane allows setting of the video resolution, target drive and the destination Interplay folder.



Video Resolution

Video resolution refers to the dimensions and the amount of compression in a video media file. The Ingest Machine application offers for selection list of possible resolutions depending on such factors as the version of your Ingest Machine application, your input interface, and the video signal standard.

For 25-fps and 30-fps projects, the Video Resolution list can show the two-field interlaced resolutions

For 25p projects, the list shows progressive, full-frame resolutions.

For more information about resolutions, see Resolution Specifications.

To select the video resolution, click on the **Video Resolution** button and select from the list of available resolutions.

For SDTI and FireWire inputs, the application automatically selects the correct resolution.

Target Drive

You select target drive as the destination for audio and video media files created when you capture from the list of available drives. When drive is selected, the **time-remaining display** shows the number of hours, minutes, seconds, and frames that are available for the resolution you selected.

You can store your media files in two places simultaneously for redundancy (Mirror Mode).

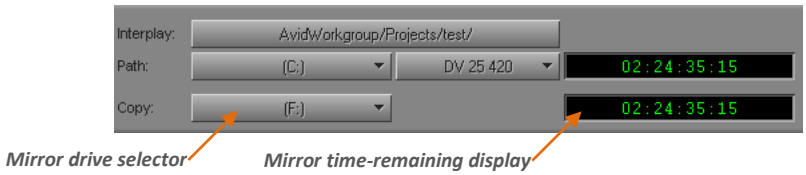
Files will be placed in the following directory:

{Target Drive}\Avid MediaFiles\MXF\{Hostname}.**X**

where **X** is an increasing number. The Ingest Machine will automatically change the folder, when 5000 files per folder limit is reached

To use the Mirror Mode:

1. Open the Channel Options dialog by pressing the **Options** button in the selected Channel window
2. Check the **Mirror mode** option
3. Close the Options dialog by pressing the **OK** button
   The second drive selector with its **time-remaining display** will appear



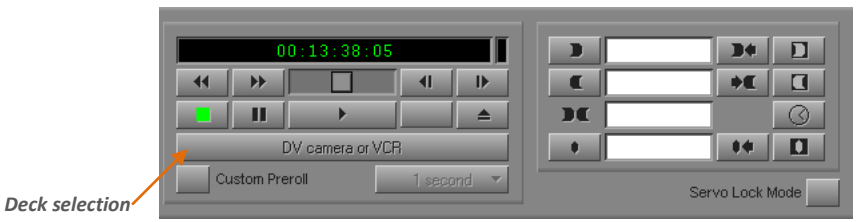
Interplay Folder

The Interplay Folder dialog box allows you to set the Interplay database location. The Ingest Machine will check in the assets to the Interplay Engine automatically after the recording is finished. See Working with the Avid Interplay for more information

Deck Control

This pane allows you to select a deck from a list of decks connected to your system. If decks are controlled from a RS-422 interface, deck to control can be chosen freely. It is advised to select the deck with video connected to present channel.

For control of the 1394 decks connected to this channel, you should select the **HOST1394** menu item in the Deck Selection dialog.



To control the deck you can push the buttons associated to the deck function, like Play, Stop, Pause etc.

Selecting a Deck

The **Deck Selection** button allows you to select decks you want to control

Before selecting, deck must be properly connected to the system.

You have two interface options for control of your deck:

- RS-422 interface which supports the Sony 9-pin protocol
- IEEE 1394 AVC interface

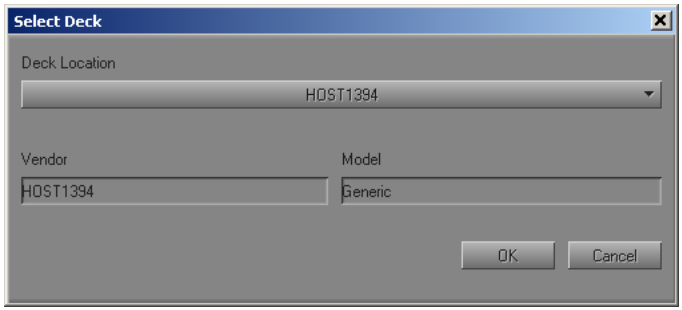
The RS-422 interface is supported by the Quadrus RS-422 VTR controller

For decks connected to the Ingest Machine by 1394 interface the control and timecode will be automatically supplied.

For decks connected to the Ingest Machine by SDI interface, the SDI embedded timecode signal D-VITC or RP 188 must be used. This function must be already activated when you connect the deck. Most decks support this function activation from the menu.

To select the deck:

1. Click the **Deck Selection** button. The Deck Selection dialog box will appear



2. Select the deck location (source port). You will see the deck's vendor and model if the deck is properly connected to the system
3. Press **OK** button. The deck controller will be activated in the Channel window

For use the D-VITC signal:

- Turn on the D-VITC in the deck menu
- Select the lines to insert the D-VITC. You must insert the D-VITC signal in two lines

The D-VITC signal must be in 19 and 21 lines for 50i or 16 and 18 lines for 59.94i

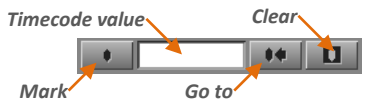
- If the D-VITC signal is not appear in the output signal, some decks require to set the blanking lines to the "**THROU**" mode

Check the D-VITC or RP 188 timecode:

1. Click the **Toggle Source** button until the **Satellite Mode** icon appears
2. Click the **TC Source** button, and select the VITC or LTC timecode
3. The timecode value displayed by Ingest Machine must be equal to the timecode value displayed by the deck

Using a Memory Mark

You can add a memory mark associated to a particular location on a tape. You can then use the **Go to Memory** button to move through the tape to the marked location. You can add one mark only.



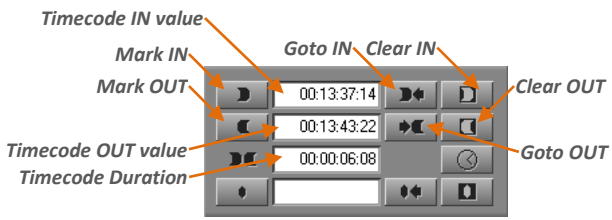
To use a memory mark:

- Click the **Mark Memory** button in the Channel window to mark the location.
- Click the **Go to Memory** button to move through the tape to the marked location.
- Click the **Clear Memory** button to clear the memory mark.

Using the Tape Position Marks

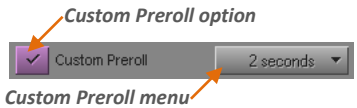
These controls are used for Logging and specific recording modes. See Logging and Capturing and Logging at the Same Time for more information. The usage of tape position buttons is similar to the memory mark buttons.

The duration field is automatically calculated from the timecode in the IN and OUT fields. If this value is entered manually, the OUT timecode will be adjusted accordingly.



Selecting a Custom Preroll

The Custom Preroll option and menu in the Channel window allow you to select how many seconds the tape rolls before the capturing starts.



To use a Custom Preroll:

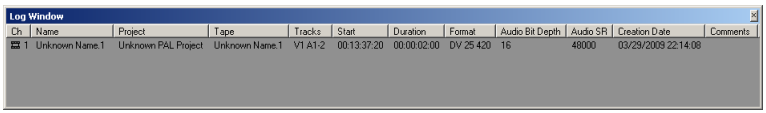
1. Check the **Custom Preroll** option
2. Select the preroll value from the menu

To disable a Custom Preroll:

1. Uncheck the **Custom Preroll** option
   The default preroll value (5 sec) will be used

Log Window

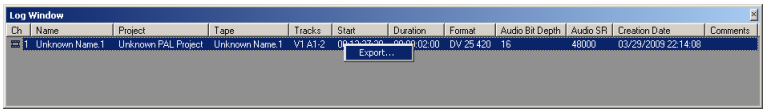
The Log window lists the information about the recorded files, such as source channel, name, duration etc… The information as added to the log window list when recording is finished successfully.



It is possible to export the AAF composition file for the selected clip from the list.

For export AAF file:

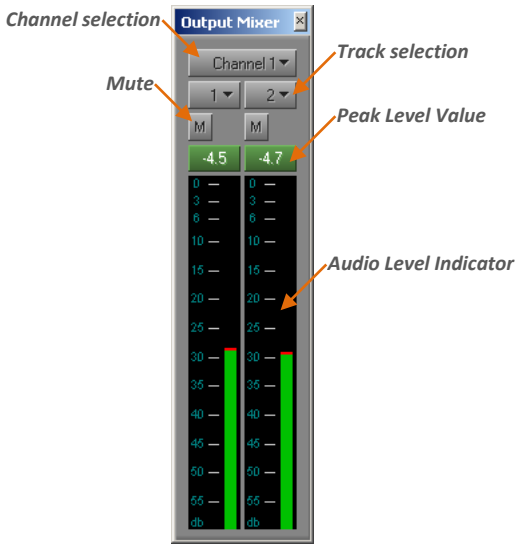
- Click the right-mouse button on the selected clip and choose **Export** from pop-up menu



- Select the destination file name and folder, and click the **Save** button in the Export dialog box.

Output Mixer

The Output Mixer window allows managing the sources for audio monitoring. You can monitor (listen) two audio tracks simultaneously. Both tracks should come from the same channel.



You need to configure your audio output device before you can interact with the Output Mixer. See Global Settings for details.

The **Channel selection** button selects the source channel

The **Track selection** buttons selects the source audio track for monitoring.

The **Mute** button allows to enable/disable the selected track for audio monitoring

The **Audio Level Indicators** display the audio level and peak value in dB. Clicking on the peak level value will reset it.

Capturing

Capturing is the process of creating digital media from video and audio input. When you capture, you convert source material into media files that contain the digital audio and video. The basic procedures you need to capture media are described in the following topics:

- Capturing and Logging at the Same Time
- Scheduled Capturing
- Capturing in Satellite Mode or No Device Control
- Synchronous Recoding

The capture can happen only if the source signal is present. The Ingest Machine gives indication on the presence of the source signal. If the signal is lost, the banner **NO SIGNAL** appears in the video monitor pane. The channel can be restarted with the **RESET** button. See Track selection for more information.

*If the signal is lost during recording, the Ingest Machine takes the same action as if the **Stop** button is pressed: the current media recording is stopped and stored; the schedule list is terminated.*

Capturing and Logging at the Same Time

There are several ways to capture and log at the same time:

- **Capturing from a mark IN to a mark OUT:** This method lets you specify the exact timecode location to begin and end capturing. You can specify both marks; alternatively you can set only one mark and let your Ingest Machine application enter the other mark on-the-fly.
  These procedures are described in Capturing by Setting Both Marks and Capturing by Setting Only One Mark.
  Use this method in the following circumstances:
  - If logs exist in written or printout form but not in the proper format for quick import into the system
  - If the IN and OUT points are rough and need to be double-checked for accuracy
  - If you are familiar enough with the source material to estimate the timecode for the mark IN, the mark OUT, or both, quickly and accurately
- **Capturing on-the-fly:** This method is easier than setting marks, but it is less precise. It involves using the deck controls in the lower left corner of the Channel window to cue, play, and stop the source footage manually while capturing. These procedures are described in Capturing On-the-Fly

Two additional techniques you can use when capturing and logging at the same time are described in Capturing with Time-of-Day Timecode and Capturing in Satellite Mode or No Device Control

Capturing by Setting Both Marks

To capture by specifying a mark IN and a mark OUT:

1. Select the proper Capture settings as described in this chapter
2. (Optional) Provide the clip name and the extra-fields.
   See Clip name and extra fields
3. (Optional) Select the Interplay Folder (see Working with the Avid Interplay)
4. Set either a mark IN or a mark OUT for the clip you want to capture, using one of the following methods:

- Use the deck controls in the Channel window. Cue your source tape to where you want to start or end the clip, and click the **Mark IN** or **Mark OUT** button.
- If the material starts at a known IN point or ends at a known OUT point, you can type the timecode in the display area next to the mark. Press Enter to enter the mark.

To double-check the accuracy of the IN or OUT point, click the **Go to IN** button. The system cues the tape and pauses the deck at the mark. You can play the tape and reset the mark, if necessary.

5. Finish logging the clip, using either of the following methods:
   - Set the corresponding IN or OUT point.
   - Type a timecode for the clip's duration in the text box next to the Duration mark (below the mark OUT) in the format HH:MM:SS:FF.

The system automatically calculates the appropriate timecode for the corresponding mark IN, mark OUT, or duration.

6. Click the **Record** button in the Channel window
   The Channel window automatically rewinds the tape to the preroll point before the IN point of the clip, and the tape begins to play. The **Record** button becomes a bright green **Stop** button.

   When the tape reaches the clip's OUT point, capturing stops and the system creates a new clip. It also enters basic log information for each clip, consisting of the mark IN, the mark OUT, the duration, and any other information typed in during the capture procedure.

Capturing by Setting Only One Mark

To set only one mark and enter the other mark on-the-fly:

- Mark an IN point and click the **Record** button to begin capturing. Then, click the **Record** button again to stop capturing on-the-fly and mark an OUT point.
  This method is useful if you do not need a precise OUT point. You save time because you do not have to shuttle to locate the OUT point before capturing

- Mark an OUT point only, then move to a position on the tape that is a few seconds before where you want to start capturing. Play the tape and then immediately click the **Record** button to begin capturing on-the-fly.
  When the tape reaches the clip's OUT point, capturing stops.
  This method is useful if you do not need a precise IN point, but do need to stop at a precise OUT point, for example, just before a timecode break.

Capturing On-the-Fly

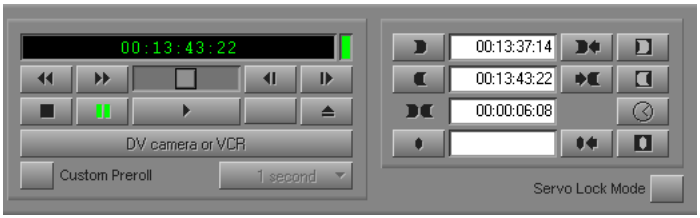
Use the capturing on-the-fly method in any of the following circumstances:

- If you need to begin editing immediately and no adequate logs exist for importing into the system or setting marks
- If your source tape does not have timecode
- If you are capturing from a live source, such as a satellite feed, or an in-house router
- If you are capturing from a source deck that cannot be controlled by the Channel window

There is a slight delay of several frames after you manually select a spot to either start or to stop capturing. Therefore, use this method when you do not need precise beginning and end points in your clip.

To capture on-the-fly:

1. Select the proper capture settings
2. (Optional) Provide the clip name and the extra-fields. See Clip name and extra fields
3. (Optional) Select the Interplay Folder. See Working with the Avid Interplay
4. Use the deck controls in the bottom left corner of the Channel window to locate the position on the tape where you want to start capturing.



5. To begin capturing, play the deck; when it gets up to speed, click the **Record** button.

Make sure you have cleared any previous marks so the deck does not begin cueing to the previous location.

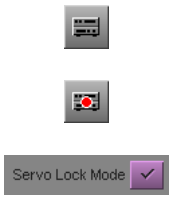
Capturing begins within a few frames, and the timecode for the clip's IN point appears.

6. Click the **Pause** button at any time to pause play.
   You can also abort the capture procedure by clicking the **Trash** button. The clip is discarded.
7. To stop capturing and enter the OUT point of the clip, click the **Stop** button.
   The system creates a new clip. It also enters basic log information for each clip, consisting of the mark IN, the mark OUT, the duration, and any other information typed in during the capture procedure.

Capturing in Quick Record Mode

Quick Record mode allows the deck to control the capturing of media into Ingest Machine application. When Quick Record mode is enabled, the Ingest Machine application starts capturing automatically whenever the servo-lock signal is detected from the deck.

When Servo Lock mode is detected (the deck is playing), capturing begins and continues until play is stopped, at which point it will wait for the next servo-lock signal.



To use Quick Record mode, you must connect a deck that supports servo-lock signals to the system. For information about the cable connection, see Selecting a Deck

To use Quick Record mode:

1. Click the **Toggle Source** button until the Deck Capture icon appears.
2. Click the **Select Deck** button, and select your deck.
   See Selecting a Deck for more information.
3. Check the **Servo Lock Mode** option

4. A check mark appears in the button and the **Toggle Source** button changes to the Quick Record Mode icon.
5. Press the deck's Play button.
6. The system starts capturing when the deck is in servo lock and stops capturing when the deck is not in servo lock (for example; stopped, rewinding, or shuttling).

During Quick Record mode, the timecode display for the deck shows the timecode followed by "* LOCAL"; for example: 00;01;05;14 * LOCAL.

The following table lists messages that might appear in the message area if the appropriate conditions for the Quick Record mode are not present. The second column recommends what you can do to be ready for the Quick Record mode.

Quick Record Condition Messages:

Message	Cause or Action Required
No deck	A deck is not selected in the Channel window or the system does not detect a deck. Make sure the deck is connected, turned on, and selected in the Channel window.
No tape in deck	The system does not detect a tape in the deck. Make sure a tape is in the deck.
No source tape selected	Give the source tape a name in the Channel window. Click the Source Tape Display button and name the tape.
Selected deck will not Servo Lock	Some deck models do not generate a servo-lock signal. This is defined in the deck's template. *If this message appears, make sure you have the correct deck selected in the Deck Selection menu. If the message continues, you cannot use the deck with Quick Record mode*.
Deck not in Local mode	Quick Record mode requires the deck to be in Local mode.

Capturing with Time-of-Day Timecode

When you capture with a Quadrus-controlled deck, you can capture your footage with time-of-day timecode rather than source timecode.

To capture with time-of-day timecode:

1. Select the proper Capture settings
2. When selecting tracks, deselect the TC button

3. Capture by using any of the techniques described in Capturing and Logging at the Same Time

Scheduled Capturing

Unlimited amount of clips from various tapes can be captured in a single session, sorted by tape ID and ascending timecode. Once the capture session is initiated, the only operator assistance needed will be to change tapes when prompted.

Content coming from live sources such as satellite feeds can be automatically captured based on a schedule loaded from the ALE formatted file.

The schedule list contains entries with: clip name, start/end and duration timecodes. Tape name and video resolution can optionally be specified for each clip. If tape name is not given, the default tape name “New Name” is used. If resolution name is not given, the current video resolution is used.

After you have loaded a schedule (see the Working with Schedule List) or have manually logged a group of clips into a schedule (see the Logging), you can automate the capture process by using your Ingest Machine application’s schedule-capturing capabilities. When you schedule capture, you open a schedule, select the clips you want to capture, and press Record button. After the clip is recorded, it is deselected from the schedule list.

The following topics provide more information about schedule capturing from logged clips:

- Scheduled Capturing from Deck
- Working with Schedule List

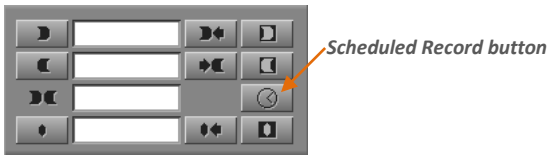
Scheduled Capturing from Deck

Before starting scheduled capturing from a deck, the deck must be properly connected and configured. See Selecting a Deck for details.

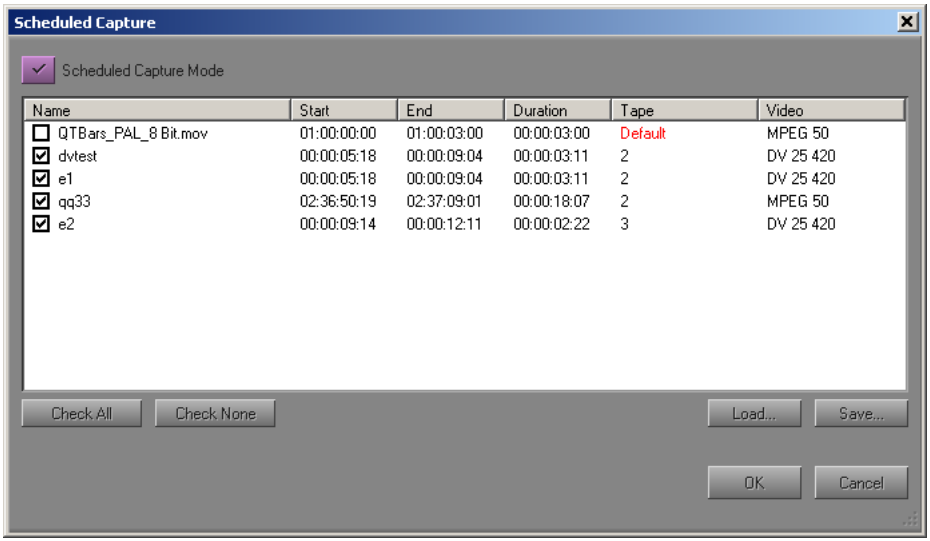
Your Ingest Machine application automatically finds the start and end timecode for each clip and captures it. To schedule capture, source tapes must have timecode that matches the timecode for the selected clips. Before the capture starts, the system requests acknowledgment for the loaded tape.

Working with Schedule List

Schedule list can be loaded from an ALE file, entries may be marked for recording or deleted, parameters can be changed and resulting schedule saved to an ALE file.



The **Scheduled Capture** button opens the Scheduled Capture dialog box for working with schedule list.



The following table lists the elements in the scheduled capture dialog box:

Element	Description
Scheduled Capture mode option	Enables and disables the scheduled capturing session.
Schedule list	Contains a list of scheduled satellite feed capture sessions. Each item in the list contains: • Name to give the created clip • When to start capturing (timecode) • When to end capturing (timecode) • How long to continue capturing (timecode) • Tape name (optional) • Video resolution (optional)
Select All/None buttons	Select/Deselect clips for capturing
Load/Save buttons	A schedule list can be saved as an Avid ALE file with the Save button and later recalled with the Load button.

To load and to prepare a schedule list:

1. Open a **Scheduled Capture** window in a selected Channel window by pressing the **Scheduled Record** button
2. Select the **Scheduled Capture Mode** option to activate the schedule mode. The controls to work with schedule become available
3. Press the **Load…** button
4. Select the source Avid ALE file from the list and click the **Open** button
5. Uncheck or delete some clip entries to exclude from capture session if necessary
6. Change the video resolutions for selected clips by double clicking on the video resolution entry. **Default** resolution corresponds to the currently selected video resolution. See Video Resolution for details.

If the loaded schedule contains incorrect (impossible) video resolution specification it is replaced by current video resolution. See Video Resolution for details

7. Click the **OK** button. The **Capture Schedule** button changes to green and the **Toggle Source** button displays the icon with a clock.

You can save a schedule as an Avid ALE file and load it at a later date

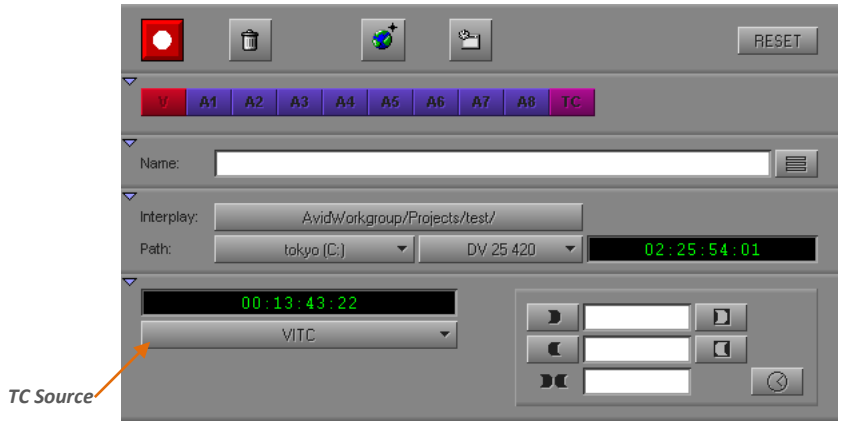
To disable a scheduled capture:

1. Click the **Toggle Source** button until the **Satellite Mode** icon appears.
2. Click the **Capture Schedule** button.
   The **Scheduled Capture** dialog box opens.
3. Uncheck the **Scheduled Capture Mode** option
4. Click the **OK** button. The **Capture Schedule** button changes to gray and the clock disappears from the **Toggle Source** button.

Capturing in Satellite Mode or No Device Control

Satellite mode using external timecode is especially useful for live events, dramatic multicamera shows.

If you are taking a feed from a source based on a time-of-day timecode generator, setting IN and OUT points are especially useful. When the time of the external timecode source matches the IN point, your Quadrus system begins to capture. Capturing stops when the external timecode matches the OUT point.



To prepare for capturing with external timecode:

1. Click the Toggle Source button until the **Satellite** icon appears.
2. Select the audio and video tracks. See Track selection
3. Select the destination media drive. See Target Drive
4. (Optional) Select the Interplay Folder. See Working with the Avid Interplay
5. (Optional) Provide the clip name and the extra-fields. See Clip name and extra fields

6. Click the **TC Source** menu, and select the timecode source
   The menu contains following choices:
   - **Internal**: Uses internal system timecode.
   - **Audio 1 - Audio 8**: Deembedding timecode from the selected audio track
   - **VITC or LTC**: Detects timecode over a SDI (D-VITC or RP 188) or 1394 interface.

   When using D-VITC, the D-VITC signal must be in 19 and 21 lines for 50i or 16 and 18 lines for 59.94i

7. Click the **Record** button to start and stop capturing of each clip

Using timecode from audio track

The Quadrus Ingest Machine can extract the SMPTE 12M (LTC) timecode from the source audio track. This audio track can be selected from the TC source menu in the Satellite mode. This is used when the timecode is not mixed into the source stream as D-VITC or RP 188. The extracted timecode may be used for synchronization of several sources in simultaneous recording, like a multi-cam shooting.

To use the audio timecode option, the signal level must be -20db +-5db

Setting the Schedule Capture

When Satellite mode is enabled, the Schedule Capture option allows you to schedule a capturing session for upcoming live satellite feeds

When **Scheduled Capture mode** is enabled, the Satellite Mode icon includes a clock, the Scheduled Capture button changes to green.

To enable a scheduled capture:

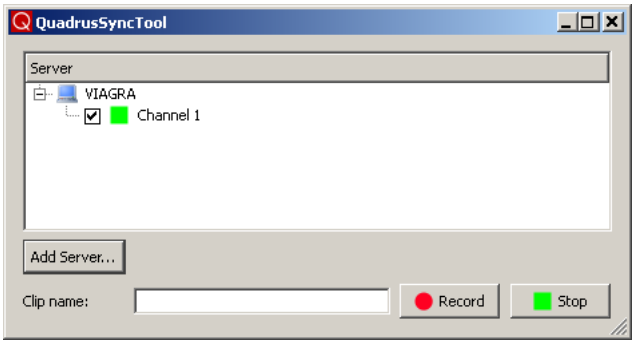
1. Load the schedule list file. See the Working with Schedule List
2. To make sure that the **Scheduled Capture Mode** option in the Schedule window is enabled and active.

To disable a scheduled capture:

1. Click the **Toggle Source** button until the Satellite Mode icon appears.
2. Click the **Capture Schedule** button.
   The Scheduled Capture dialog box opens.
3. Uncheck the **Scheduled Capture Mode** option
4. Click the **OK** button

Synchronous Recoding

Your Quadrus Ingest Machine application allows you to record several channels synchronously, using the single timecode for synchronization. The clips after recording will have the same start timecode. You can simultaneously control several channels on the single or multiple stations. You should have the Ethernet connection between multiple machines for this to work.



To use the synchronous recording process:

1. Run the Ingest Machine application on all stations
2. On all machines, one by one, set all channels to the Satellite mode and prepare them for the Satellite recording. For more information, see the Capturing in Satellite Mode or No Device Control
3. In the Channel settings, specify the clip name suffix or prefix to make a channel-specific name. Otherwise, all channels will have the same clip name.
4. Select one station as master control machine by opening the Quadrus SyncTool on that machine by clicking the *Tools>SyncTool* menu. The SyncTool application window will appear.
5. Click the **Add Server** button to enter the network machine names. The local machine name may be entered as a single dot "**.**". The list of participating machines will appear with status of available channels

6. You can exclude some channels from the synchronous recording by unchecking selected channels
7. Enter the clip name
8. Click the **Record** button for the start of record
9. Clip **Stop** button for the stop record

Logging

Logging is the process of entering information about source material into a schedule at the beginning of the capturing. Logging can be done only when a deck is available.

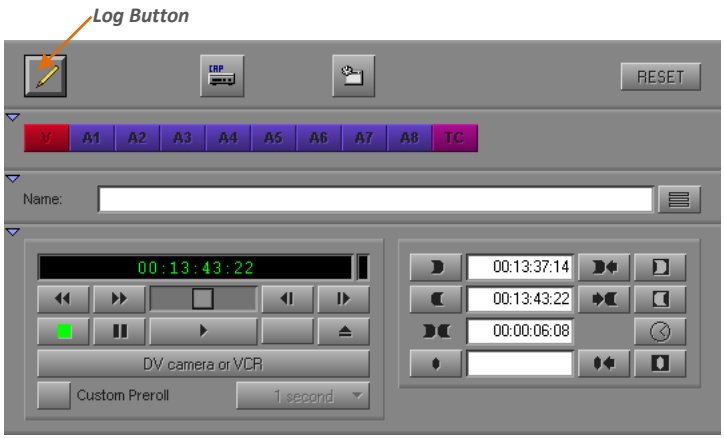
You can get schedule list into your application either by loading an Avid ALE file or by entering the information directly. Logging can be done automatically or manually, before capturing or at the same time as capturing.

When you load an Avid ALE files or log directly into an application, you provide your Ingest Machine application with frame-accurate clip information (such as starting and ending timecodes). Your application uses this information to capture the source footage.

You can load any shot log created or converted to meet Avid log specifications. You can also combine or merge events while importing a log so that fewer master tapes require capturing. The system imports any additional information logged with each clip. For more information, see "*Understanding Avid Log Specifications*" in the Avid Help.

Logging with Quadrus Controlled Decks

When you log with a compatible tape deck controlled from within your Ingest Machine application, you can automate part of the logging process by using buttons to enter frame accurate timecode information from the deck.



For information about connecting a compatible deck to your system, see Selecting a Deck

To log clips from a Quadrus-controlled deck:

1. Make sure the deck is properly connected and turned on.
2. Select the Channel, where you want to store the clips.
3. If the Channel is not currently in Log mode, click the Capture/Log Mode button until the LOG icon appears.
4. Click **Deck Selection** button, and select a deck
5. Insert your tape into the deck

6. Set either an IN point or an OUT point for the clip you want to log using one of the following methods:

- **If you want to keep the deck running while you log:** Start the deck. At the point where you want to start the clip, click a **Mark IN** button (you can use either the **Mark IN** button in the upper left of the Channel window or the **Mark IN** button in the lower right). The deck continues to play.

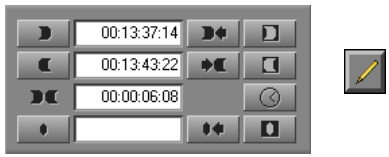
If you want to pause the deck while you enter a clip name and comments, see Pausing the Deck While Logging

- **If you want to cue your source tape to the start or end point:** Use the deck controls in the Channel window to cue your source tape to the start or end point. Click a **Mark IN** button or the **Mark OUT** button in the lower right of the Channel window.
- **If you want to log using timecode:** If the footage starts at a known IN point or ends at a known OUT point, type the timecode in the text box next to the **Mark IN** button or the **Mark OUT** button. Then enter the mark by pressing the **Go to IN** button or the **Go to OUT** button, which scans the tape forward to the mark, or by pressing Enter.

After you set the mark, the **Mark IN** button changes to the **Mark OUT/Log** button or the **Mark IN/Log** button, depending on the first mark you set.

7. (Optional) Provide the clip name. See Clip name and extra fields

8. To finish logging the clip, do one of the following:
    - **If the deck is running:** Click the **Mark OUT/Log** button. The clip is logged into the bin and the deck continues to play.
    - **If you want to cue the remaining start or end point:** Use the deck controls to locate the start or end point. Set the remaining IN point or OUT point either by clicking the **Mark OUT/Log button** or the **Mark IN/Log** button. The clip is being logged into the bin.
    - **If you want to log using timecode:** Type a timecode for the clip's IN point, OUT point, or duration in the timecode text boxes next to the corresponding icon. Then enter the mark by pressing the **Go to IN** button or the **Go to OUT** button, which scans the tape forward to the mark, or by pressing Enter. To log the clip, click the Log Clip button in the upper left of the Channel window.



9. Repeat these steps until you have logged all your clips.

While viewing the footage, you can continuously update your marks on-the-fly by clicking the **Mark IN** button or the **Mark OUT** button repeatedly before entering the second mark.

Pausing the Deck While Logging

If the deck is playing while you log clips, you can direct your Ingest Machine application to automatically pause the deck after you set an IN point and an OUT point. While the deck is paused, you can enter the name and comment for the clip you want to log.

To pause the deck while logging:

1. In the General tab of the Settings dialog box, select the "Pause deck while logging" option.
2. Set up your deck and the Channel window as described in Logging with Quadrus Controlled Decks
3. When you reach the point where you want to start the clip, click the **Mark IN** button in the upper left of the Channel tool. The **Mark IN** button changes to the **Mark OUT** button and the deck continues to play.
4. When you reach the point where you want to end the clip, click the **Mark OUT** button in the upper left of the Channel tool. The **Mark OUT** button changes to the **Log** button, and the deck pauses.
5. Type a clip name and comment in the corresponding text boxes in the Channel window.
6. Click the **Log** button.

Your Quadrus application logs the clip, and the deck starts playing again.

Working with the Avid Interplay

The Avid Interplay support provides the capabilities to capture media to a folder in the Interplay database. To use this option you must have the Avid Interplay Web Services Server in the same network with the Quadrus Ingest Machine and configure your Ingest Machine application. For more information, see the "*Avid Interplay Installation Guide*".

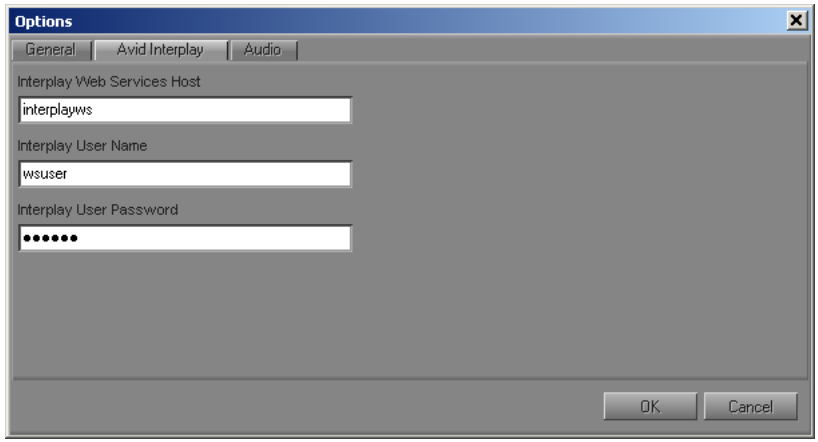
Connecting to the Avid Interplay

You need to configure your Ingest Machine application before you can interact with the Avid Interplay.

You must specify the Avid Interplay Web Server location to let your Ingest Machine application know where to look for the Interplay Engine on the network. After you specify the network settings, you can check in clips into Interplay database.

To setup the connection with the Interplay Web Services Server:

1. Open the global settings dialog by click the *Tools>Options*. The settings dialog will appear.
2. Open the **Avid Interplay** tab



3. Enter the Avid Interplay Web Services Server name, user name and password
4. Close the settings dialog by pressing the **OK** button

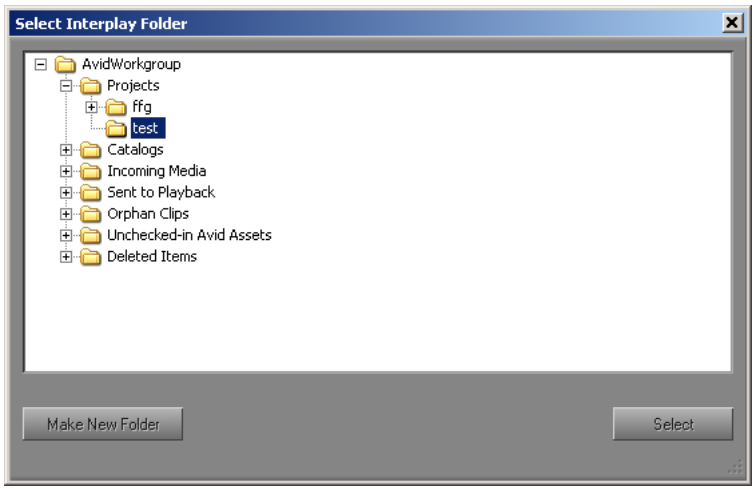
If you enter the right parameters, the **Interplay Folder** button in the Channel(s) window will be activated automatically.

Selecting the Interplay Folder

The directory defined in your Interplay Folder dialog identifies the Interplay folder location to which you check in media objects.

To select the Interplay Folder:

1. Press the **Interplay Folder** button in the selected Channel window. The Interplay Folder dialog box will appear



2. Select the destination folder. Create the new folder if necessary by pressing the **Make New Folder** button. To select the root folder as destination folder is not allowed.
3. Close the dialog by pressing **Select** button.

Advanced Input

Vertical Blanking Information

Quadrus Ingest Machine application using input hardware let you work with vertical blanking information in some SD material. You can choose whether to display 5 lines above each field in NTSC and 8 lines above each field for PAL and whether to preserve the lines when you perform a digital cut. These lines can be used to store additional encoded information such as closed captioning, edge codes or key numbers for film projects, or various interactive or enhanced TV codes. This section describes when it is useful to preserve the information and describes the limitations involved when preserving these lines.

You can preserve VBI information for uncompressed, and MPEG IMX resolutions. You cannot preserve VBI information for DV resolutions.

Vertical Blanking Interval Line Ranges

Your Quadrus Ingest Machine application can capture 248 lines per field in NTSC or 296 lines per field in PAL. For NTSC, only 243 of these lines are in RP-187's production aperture. For PAL, the number is 288. The additional lines in each field are located immediately above the active part of each of the two fields. These lines (5 per field in NTSC and 8 per field in PAL) can be used for carrying additional data.

The following table lists the extra vertical blanking lines for both NTSC and PAL:

Field	Video Raster Line Number Ranges	
	NTSC (5 Lines/Field)	PAL (8 Lines/Field)
Field 1	16-20	15-22
Field 2	278-282	328-335

Displaying and Preserving Vertical Blanking Information

Ingest Machine application using input hardware automatically preserves the extra lines of vertical blanking information when you capture footage. You can choose whether to display the lines and whether to retain the lines when you output your sequence as a digital cut.

You might want to preserve the following vertical blanking information:

- Edge code or key number information for a film project

  You might want to preserve edge code information to easily identify the source film reel for a clip. In this case, the edge code information would have been originally inserted during the telecine process.

- Closed-captioning information

If you are repurposing a finished sequence for another market, you might want to retain closed-captioning codes that were added after the tape was output from the Quadrus system. This would allow you to perform some basic editing on the recaptured sequence and not to have to reapply the closed-captioning codes afterward.

Your Ingest Machine application does not interpret the vertical blanking information (the encoded data). It treats the coded values simply as pixels in the video frame. If you want to read the vertical blanking information during editing, you must connect an external vertical blanking information reader to the Quadrus system.

Effects of Preserving Vertical Blanking Information on Compressed Video Quality

For resolutions other than 1:1, preserving vertical blanking information when you capture can affect the video quality in the rest of the frame. For example, depending on the compression ratio, a video frame might look blockier with vertical blanking information included.

Your Ingest Machine application performs the following operations when capturing a frame:

1. It captures the entire frame (including the 5 or 8 extra lines per field) as an uncompressed frame.
2. It compresses the frame if compression is selected.

The following problems may occur:

- If the frame contains vertical blanking information, the picture quality of the entire frame might be slightly degraded due to the added entropy or complexity from the vertical blanking lines.
  The higher the compression ratio, the greater the number of the artifacts that might be visible.
- Depending on the compression ratio, the vertical blanking information itself may be distorted.

If you want to preserve vertical blanking information, either use the 1:1 (uncompressed) resolution or experiment with different compression ratios to make sure the captured footage or the vertical blanking information is not unacceptably affected by the compression.

Resolutions and Storage Requirements

This section describes the different resolutions available in your Quadrus Ingest Machine application and lists their specifications. It also explains how to estimate the drive space you will require to store your captured media. This section includes the following topics:

- Compression and Ingest Machine application
- Monitor Display Resolutions
- Compression and Resolutions
- Storage Requirements
- Maximizing Drive Space

The resolutions available in your Ingest Machine application depend on its model and options.

Compression and Ingest Machine application

Ingest Machine application support both compressed and uncompressed resolutions.

When an Ingest Machine application captures and stores video at a compressed resolution, it employs compression techniques that affect the size of the resulting files and the resolution of the images they contain. The less the data is compressed, the higher the image resolution and the more drive space the file requires.

Large media files at high resolutions can use very large amounts of drive space. When you are choosing an image resolution for your project, you need to balance your requirements in terms of image quality with your available drive resources.

You can use lower resolutions when your work does not require very high image quality (for example, in offline work, or in CD-ROM or Web authoring projects), and higher resolutions when you need excellent image quality. You can also mix different resolutions within the same schedule list.

Ingest Machine application also supports the capture and storage of video that is not processed by a data compression scheme:

- Uncompressed video (1:1) is available as standard definition (conforming to the ITU-R 601 standard). The image quality of uncompressed video is very high, but uncompressed files require very large amounts of drive space.
- DV (digital video) is a compressed media format. When capturing through a SDTI or 1394 connection, your Ingest Machine application records DV media in its native format, and does not compress it further.
- When capturing through a SDTI connection, your Ingest Machine application records media in its native format, and does not compress it further.

Monitor Display Resolutions

The resolution in your Ingest Machine application varies depending on the video format, as described in the following table.

Video Format	Active video displayed (in pixels)	Stored video not displayed
NTSC 1:1 (Uncompressed) **NTSC MPEG IMX**	720 x 486 non-square	10 lines of blanking or varietal interval timecode (VITC) per frame (5 lines per field)
NTSC DV 25 and DV 50	720 x 480 non-square	None
PAL 1:1 (Uncompressed) **PAL MPEG IMX**	720 x 576 non-square	16 lines of blanking or VITC per frame (8 lines per field)
PAL DV 25 and DV 50	720 x 576 non-square	None

For more information on blanking or VITC, see Vertical Blanking Information

Compression and Resolutions

Ingest Machine application provides you with a range of resolutions, both compressed and uncompressed, that you can use at various stages of your project. You can also mix certain resolutions within a sequence. You should plan the use of drive volumes in advance, especially when you capture numerous reels or tapes

Resolution Specifications

The following tables provide information about SD Uncompressed resolutions, DV resolutions and MPEG resolutions:

- Estimated Storage Requirements: SD Uncompressed
- Resolution Specifications: Digital Video (DV)
- Estimated Storage Requirements: MPEG

The resolutions available on your Ingest Machine editing application might vary from this list, depending on the model and the hardware used in your system.

Resolution Specifications: SD Uncompressed

The following table provides information about the Ingest Machine resolutions for uncompressed media. Frame size does not include blanking or VITC lines.

Resolution	Field Size (Visible Pixels)	Fields Per Frame	Quality
1:1 interlaced	720 x 486 (NTSC) 720 x 576 (PAL)	2	Online uncompressed — provides the highest 8-bit image quality
1:1 progressive	720 x 486 (NTSC) 720 x 576 (PAL)	1	Online uncompressed — provides the highest 8-bit image quality

Resolution Specifications: Digital Video (DV)

Digital video (DV) is an international standard created by a consortium of 10 companies to serve as a consumer digital video format. Ingest Machine application support two DV resolutions: DV 25 and DV 50

DV, originally known as DVC (Digital Video Cassette), uses a 1/4-inch tape to record very high quality digital video. The video is sampled at the same rate as D1, D5, or Digital Betacam video (720 pixels per scan line). The color information in DV 25 is sampled at the D1 rate of 4:1:1 in 525-line (NTSC) and 4:2:0 in 625-line (PAL) formats. DV 50 is defined as 720 x 480, 50-megabit-per-second (Mb/s) 4:2:2 DV.

The following table provides DV resolution specifications.

Resolution	Frame Size	Color Sampling	Megabits per second (Mb/sec)
DV 25 411 interlaced	720 x 480 (NTSC) 720 x 576 (PAL)	4:1:1	25
DV 25p 411 progressive	720 x 480 (NTSC) 720 x 576 (PAL)	4:1:1	25
DV 25 420 interlaced	720 x 576 (PAL)	4:2:0	25
DV 50 interlaced	720 x 480 (NTSC) 720 x 576 (PAL)	4:2:2	50
DV 50p progressive	720 x 480 (NTSC) 720 x 576 (PAL)	4:2:2	50

Resolution Specifications: MPEG

MPEG resolutions are resolutions specifically intended to support the SMPTE Type D-10 bit stream produced and recorded by devices such as Sony MPEG IMX VTRs. It uses 4:2:2 sampling.

The following table provides MPEG resolution specifications. Frame size does not include blanking or VITC lines.

Resolution	Frame Size (Visible pixels)	Megabits per second (Mb/sec)
MPEG 30	720 x 480 (NTSC) 720 x 576 (PAL)	30
MPEG 40	720 x 480 (NTSC) 720 x 576 (PAL)	40
MPEG 50	720 x 480 (NTSC) 720 x 576 (PAL)	50

Storage Requirements

You should plan the use of drive volumes in advance, especially when you capture numerous reels or tapes.

Estimating Drive Space Requirements contains recommendations for achieving efficient storage for your digital media. It explains how playback performance can be affected by the way you set up the storage drives and target them when you capture.

The tables in the remaining topics in this section show estimated drive space requirements for each resolution, including uncompressed. They show figures for estimated minutes per gigabyte and also figures for the drive space required for certain amounts of material.

Estimating Drive Space Requirements

You need to select a resolution that provides adequate picture quality for your project. However, you might be limited by the amount of media drive space available. Before you capture, estimate your media drive space requirements.

To estimate media drive space requirements:

1. Use the appropriate resolution specifications table.

See Resolution Specifications, and the information in your media drive documentation to select a resolution that is compatible with the drive and striping capacity on your system.

2. Open the Channel window, select a resolution and target drive or drives, and note the time remaining on the selected drives.
   See Video Resolution in the Help
3. Get a total duration for all the clips to be captured.
4. Use the appropriate estimated storage requirements table to estimate your drive space requirements based on the resolution and the number of audio tracks.
   See the following topics. To get an estimate of the number of gigabytes needed, do one of the following:
   - Calculate by dividing the duration of your material (number of minutes) by the estimated minutes per gigabyte.
   - Calculate by combining storage figures from the "Drive Space Needed for *x* Minutes of Media" columns as necessary to match the number of minutes of material you have.
5. Compare the gigabytes available on your drives with the result of step 4.

If your needs are greater than your drive space, select a lower resolution and recalculate.

The information in the storage tables is approximate, so it's a good idea to slightly overestimate the amount of drive space you require.

Estimated Storage Requirements: SD Uncompressed

The following table provides information to help you estimate the storage requirements for SD Uncompressed media.

Before using this table, read the information in Estimating Drive Space Requirements

This table does not include estimated storage requirements for audio.

Resolution (NTSC and PAL)	Minutes Per Gigabyte	Drive Space Needed for 1 Minute of Media (GB)	Drive Space Needed for 10 Minutes of Media (GB)	Drive Space Needed for 30 Minutes of Media (GB)
1:1	0.8	1.3 GB	13.0 GB	39.0 GB

Estimated Storage Requirements: DV

The following table provides information to help you estimate the storage requirements for DV media.

Before using this table, read the information in Estimating Drive Space Requirements

This table does not include estimated storage requirements for audio.

Resolution (NTSC and PAL)	Minutes Per Gigabyte	Drive Space Needed for 1 Minute of Media (GB)	Drive Space Needed for 10 Minutes of Media (GB)	Drive Space Needed for 30 Minutes of Media (GB)
DV 25	5.0	200 MB	2.0 GB	6.0 GB
DV 50	2.5	400 MB	4.0 GB	12.0 GB

Estimated Storage Requirements: MPEG

The following table provides information to help you estimate the storage requirements for

MPEG media.

Before using this table, read the information in Estimating Drive Space Requirements

This table does not include estimated storage requirements for audio.

Resolution (NTSC and PAL)	Minutes Per Gigabyte	Drive Space Needed for 1 Minute of Media (GB)	Drive Space Needed for 10 Minutes of Media (GB)	Drive Space Needed for 30 Minutes of Media (GB)
MPEG 30	4.7	210 MB	2.1 GB	6.3 GB
MPEG 40	3.6	280 MB	2.8 GB	8.4 GB
MPEG 50	2.9	350 MB	3.5 GB	10.5 GB

Maximizing Drive Space

If your media drive space is limited or you are capturing a large amount of source material, follow these suggestions to maximize your usage of the media drive space:

- Capture only the audio channels required for the edit.
- Log in advance. Schedule capture only the footage required for the edit.
- Capture at a lower resolution for editing. Recapture only the clips included in the final cut at a higher resolution.

For more information on schedule capturing and recapturing, see Scheduled Capturing

Application Settings

There are two application settings type available: global settings for application and Channel settings for each channel individually. The Global settings dialog is displayed by clicking *Tools>Settings* menu in the application window. The Channel setting dialog is available by clicking on the Settings icon in the selected Channel window.

Global Settings

To open the global settings dialog, click the *Tools>Settings* menu.

The global setting dialog has a few tabs. The description of each parameter is below:

General Tab:

Ask before discarding a canceled clip	Select this option if you want to display a confirmation dialog when you press the Trash button during the recording process.

Avid Interplay Tab:

You need to configure your Ingest Machine application before you can interact with the Avid Interplay. The Interplay tab defines user and login preferences for using the Avid Interplay. For more information, see the Avid Interplay Installation Guide.

Interplay Web Services Host	Allows you to enter the computer name of your Avid Interplay Web Services Server
Interplay User Name	Allows you to enter a user name. This name must be a known workgroup user
Interplay User Password	Allows you to enter a password

If all the Interplay parameters are entered correctly, the “Select Interplay Folder” button in the Channel window(s) will be activated automatically

Audio Tab:

This tab contains several settings for audio monitoring

Output Device	This list contains the audio devices for audio monitoring. Select No Audio for disable audio monitoring
Sync Mode	Audio monitoring synchronization method Currenly disabled. Automatic setting is used instead
Audio Monitoring Mix Mode:	Select the mixing method for internal audio mixer. In the **Stereo** mode you can listen to the two channels independently. In the **Mono** mode both output channels have the same mono-mixed signal

Channel settings

To open the global settings dialog, click the **Channel Settings** button in the selected Channel window.

The Channel setting dialog has a few tabs. The description of each parameter is below:

General Tab:

Use Mirror Mode	Enable to select the second media drive for the redundant copy. See Target Drive for details
Capture Across Timecode Breaks	When you select this option, your Ingest Machine application ignores the timecode breaks on the tape. Deselect this option if you want to stop capturing when timecode breaks is detected.
SyncRecord Clip Name Add-on	The clip name prefix or suffix used in the Quadrus Sync Tool application. Allows you to make a channel-depended clip name. The set prefix or suffix will be added to the clip name set in the Channel window. For additional information, see Clip name and extra fields
Stop any paused deck when quitting	Stops any attached decks when quitting the Ingest Machine application. See Quitting Your Quadrus Ingest Machine Application for details

View Tab:

16:9 Monitor	Enable the widescreen video monitoring
Audio Channels	Select how many audio inputs per channel will be monitored simultaneously: 4 or 8

Deck Tab:

Deck Mode	Select the Deck action after the Schedule capturing – Stop or Pause
Pause deck while logging	See Pausing the Deck While Logging for details

Audio Tab:

Sample Rate	Select the destination audio sample rate. Currently, the 48kHz only is supported
Audio File Format	Allows to select the audio media format. Currently the Avid MXF format only is supported
Sample Bit Depth	Select the destination audio bit depth: 16 Bit or 24 Bit
DV audio pattern	Select how to extract and use the audio information from the DV sources (applicable to the 1394 or SDTI signals). Currently disabled. Automatic selection is used.

LowRez Tab:

Resolution	Allows to select the LowRez video resolution for the Avid Interplay environment. The LowRez video is created simultaneously during the recording process and automatically checked-in to the Interplay database.

MediaType Tab:

Video File Format	Allows to select the video media format. Currently, the Avid MXF format only is supported**.**

Appendix A. Installation Instructions

To install from the Quadrus Ingest Machine CD, simply insert the CD into the drive. If setup does not begin automatically, you will need to run QuadrusIngestMachine78.exe from the CD's root directory.

You must have administrator privileges on your PC

Downloading a software

To install the downloaded version (recommended, as it will be the most up-to-date), first download the installer from the Quadrus website:

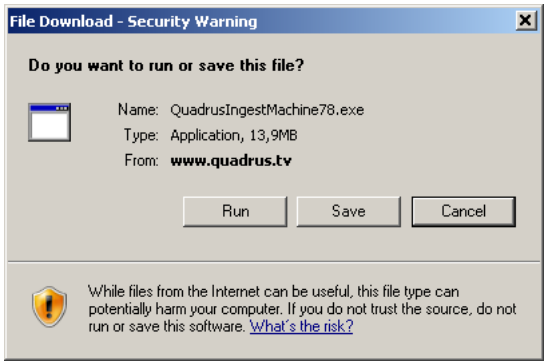
www.quadrus.tv/download.html

Click on the latest Ingest Machine installer version, you will see a window similar to this:

Connect to www.quadrus.tv
The server www.quadrus.tv at restricted area requires a username and password.
Warning: This server is requesting that your username and password be sent in an insecure manner (basic authentication without a secure connection).
User name:
quadrus_user
Password:
Remember my password
OK
Cancel

Copy & Paste the username and password sent to you in your license email. (Highlight the text, press 'Ctrl + C' to copy and 'Ctrl + V' to paste into the required fields)

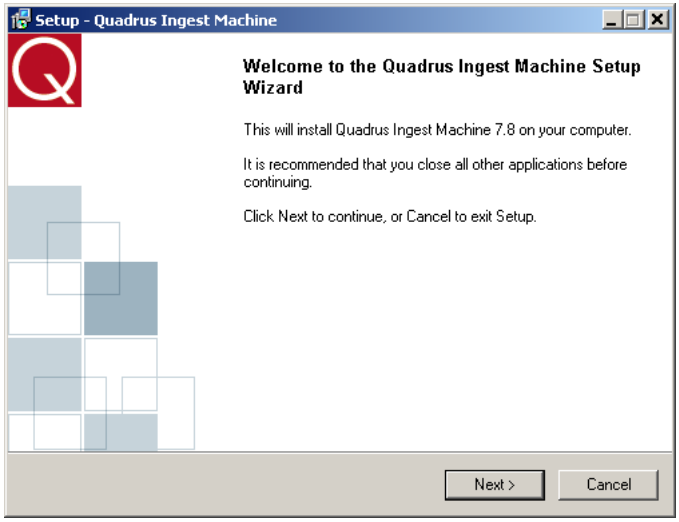
Click OK and you'll see a window similar to this:


File Download - Security Warning
Do you want to run or save this file?
Name: QuadrusIngestMachine78.exe
Type: Application, 13,9MB
From: www.quadrus.tv
Run
Save
Cancel
While files from the Internet can be useful, this file type can potentially harm your computer. If you do not trust the source, do not run or save this software. What's the risk?

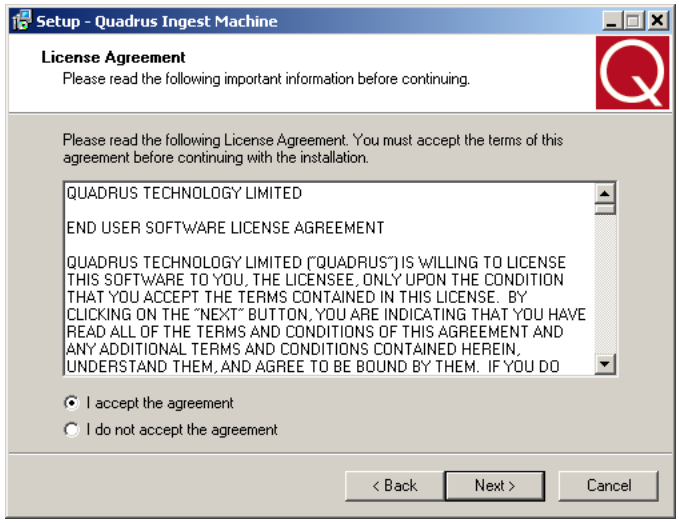
Click 'Save' button to save the download

Installation

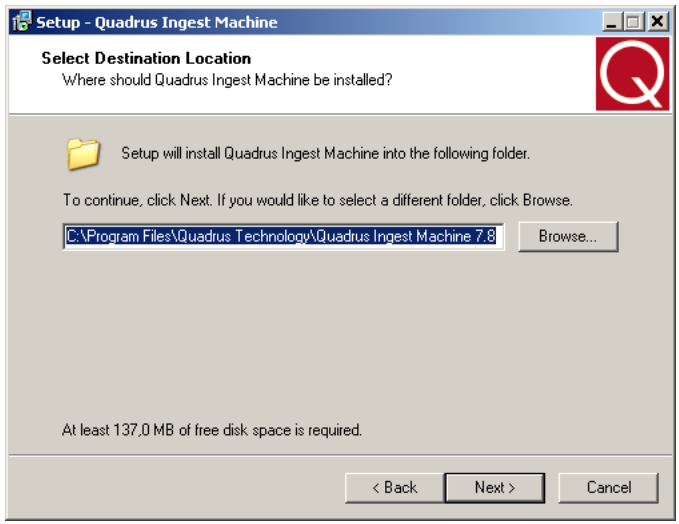
Click on the downloaded file. You will see the window similar to this:


Setup - Quadrus Ingest Machine
Welcome to the Quadrus Ingest Machine Setup Wizard
This will install Quadrus Ingest Machine 7.8 on your computer.
It is recommended that you close all other applications before continuing.
Click Next to continue, or Cancel to exit Setup.
Next >
Cancel

Press 'Next' button to continue


Setup - Quadrus Ingest Machine
License Agreement
Please read the following important information before continuing.
Please read the following License Agreement. You must accept the terms of this agreement before continuing with the installation.
QUADRUS TECHNOLOGY LIMITED
END USER SOFTWARE LICENSE AGREEMENT
QUADRUS TECHNOLOGY LIMITED ("QUADRUS") IS WILLING TO LICENSE THIS SOFTWARE TO YOU, THE LICENSEE, ONLY UPON THE CONDITION THAT YOU ACCEPT THE TERMS CONTAINED IN THIS LICENSE. BY CLICKING ON THE "NEXT" BUTTON, YOU ARE INDICATING THAT YOU HAVE READ ALL OF THE TERMS AND CONDITIONS OF THIS AGREEMENT AND ANY ADDITIONAL TERMS AND CONDITIONS CONTAINED HEREIN, UNDERSTAND THEM, AND AGREE TO BE BOUND BY THEM. IF YOU DO
I accept the agreement
I do not accept the agreement
< Back
Next >
Cancel

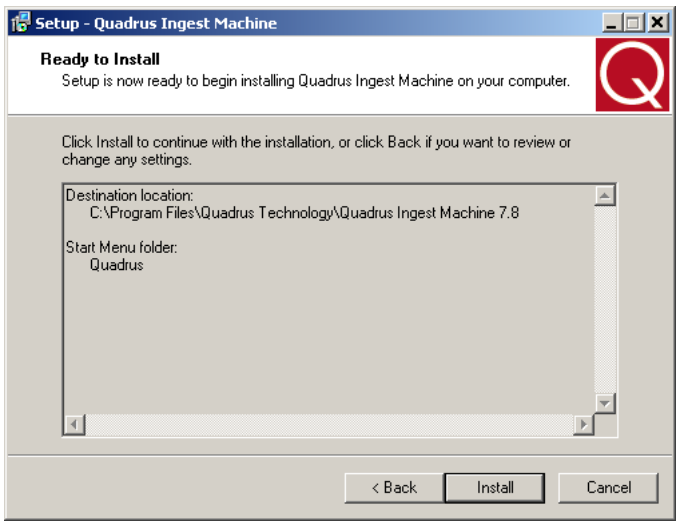
Please, read the Software License Agreement carefully, select the 'I accept the agreement' and press the 'Next' button to continue


Setup - Quadrus Ingest Machine
Select Destination Location
Where should Quadrus Ingest Machine be installed?
Setup will install Quadrus Ingest Machine into the following folder.
To continue, click Next. If you would like to select a different folder, click Browse.
C:\Program Files\Quadrus Technology\Quadrus Ingest Machine 7.8
Browse...
At least 137,0 MB of free disk space is required.
< Back
Next >
Cancel

Select the installation directory and press 'Next' button to continue.

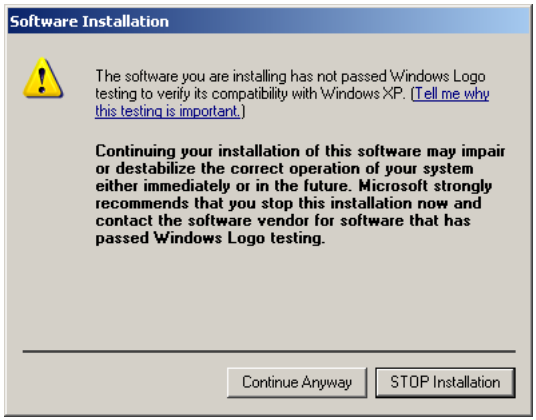
We do not recommend changing the directory proposed by default.

Press ‘Next’ button to continue

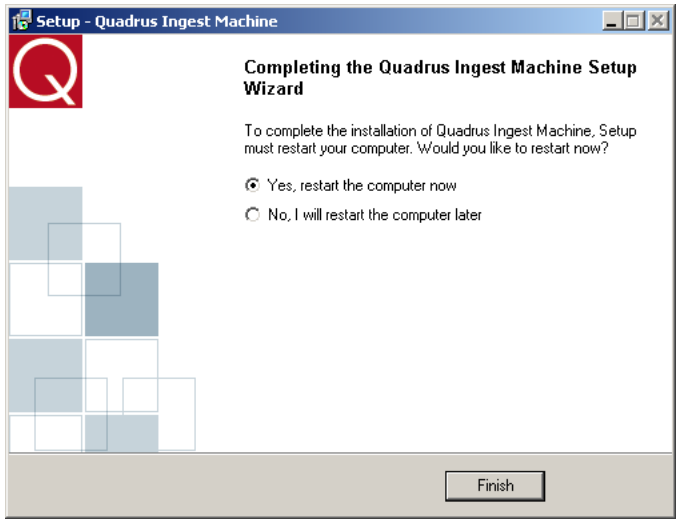

Setup - Quadrus Ingest Machine
Ready to Install
Setup is now ready to begin installing Quadrus Ingest Machine on your computer.
Click Install to continue with the installation, or click Back if you want to review or change any settings.
Destination location:
C:\Program Files\Quadrus Technology\Quadrus Ingest Machine 7.8
Start Menu folder:
Quadrus
< Back
Install
Cancel

Now, you are ready to install. Press ‘Install’ button to continue

During installation, the following window may appear.


Software Installation
The software you are installing has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the software vendor for software that has passed Windows Logo testing.
Continue Anyway
STOP Installation

Press the ‘Continue Anyway’ button


Setup - Quadrus Ingest Machine
Completing the Quadrus Ingest Machine Setup Wizard
To complete the installation of Quadrus Ingest Machine, Setup must restart your computer. Would you like to restart now?
Yes, restart the computer now
No, I will restart the computer later
Finish

The installation is complete. Press the ‘Finish’ button when prompted